

Metal Industry Indicators

Indicators of Domestic Primary Metals, Steel, Aluminum, and Copper Activity

May 2001

No Metal Industry Indicators in June

The U.S. Census Bureau is about to begin publishing its Manufacturers' Shipments, Inventories, and Orders data according to the new North American Industry Classification System (NAICS). The new monthly data will result in significant disruptions to some of the indicators used in the leading and coincident indexes in the *Metal Industry Indicators*. This is because the NAICS is replacing the Standard Industrial Classification (SIC), which has been the bedrock of the Census and almost all other Federal and private economic statistics for over 70 years. During June, the USGS will be assessing the effects of the new NAICS data on the leading and coincident indexes and revising them as needed. A combined June/July issue of the USGS *Metal Industry Indicators* is scheduled for publication at the end of July.

The NAICS was developed to classify industry data in old and new industries agreed upon by Canada, Mexico, and the United States. Other Federal agencies that provide data for the *Metal Industry Indicators* are also expected to revise their statistics within the next 3 years to conform to NAICS. The Federal Reserve Board, for example, will begin producing new industrial production indexes in Spring 2002. This will necessitate another revision for the *Metal Industry Indicators*. (See the USGS web page on *Metal Industry Indicators* at: <http://minerals.usgs.gov/minerals/pubs/mii/> for updated information. For more information about NAICS, see the website at: <http://www.census.gov/epcd/www/naics.html>.)

The primary metals leading index has increased three of the past four months, suggesting that the decline in steel and nonferrous metals activity may end soon. The steel and aluminum mill products leading indexes have posted solid gains in recent months. Because of slowing world economic activity, the metals price leading index has sunk to a 20-year low, pointing to little or no growth in overall metal prices during the next few months.

The **primary metals leading index** increased 0.7% in April, up to 123.5 from a revised 122.7 in March. The index's 6-month smoothed growth rate, a compound annual rate that measures the near-term trend, continued to move up, increasing to -1.2% from a revised -3.0% in March. That marks the highest growth rate for this index since April of last year. Normally, a growth rate below -1.0% signals a downward near-term trend for future growth in metals activity, while a growth rate above +1.0% signals an upward trend.

Only four of the index's eight components were available in time to calculate the April leading index, so it should be considered preliminary. Nearly all of the strength in the leading index was attributable to one component, the length of the average work-week in primary metals establishments. The metals price index growth rate moved down for the third month in a row, while the

other two available components, the Purchasing Managers' Index and the S&P stock price index for diversified machinery companies, registered increases that were so small their contributions to the index rounded to zero. The growth rate of the leading index, which has moved up the past 4 months, holds out some hope that the decline in most domestic primary metals activity may end soon.

The **steel leading index** surged 1.5% in March, the latest month for which it is available, climbing to 105.8 from a revised 104.2 in February and marking its largest monthly increase in 2 years. The index's 6-month smoothed growth also rose sharply, increasing to -2.0% from a revised -5.8% in February. Six of the index's nine components posted gains in March, two were essentially flat, and only one, the index of new housing permits, moved down. The inflation-adjusted value of the U.S. M2

money supply and the industrial production index for automotive products made the largest positive contributions to the net increase in the March leading index. The steel leading index suggests that the decline in U.S. steel industry activity may bottom out soon.

The **aluminum mill products leading index** rose 0.7% in March, climbing to 161.9 from a revised 160.7 in February. Meanwhile, the index's 6-month smoothed growth rate moved up to 4.2%, its highest growth rate since July 1999. The growth rate of the inflation-adjusted M2 money supply, which increased by the largest amount since June 1995, made the strongest positive contribution to the net increase in the leading index. In fact, without the contribution from the money supply component the leading index would have decreased slightly in March. The industrial production index for automotive products also added a strong positive contribution. The 6-month smoothed growth rate of the leading index points to modest near-term growth in aluminum mill products activity.

The **primary aluminum leading index** fell 0.8% in March to 85.4 from a revised 86.1 in February, and its 6-month smoothed growth rate slipped to -4.6% from a revised -4.1% in February. The index measuring the trade-weighted average exchange value of other major currencies against the U.S. dollar and the LME cash closing price of aluminum made the largest negative contributions to the net change in the leading index. Only two of the index's seven components moved up in March. The growth rate of the primary aluminum leading index points to further declines in U.S. primary aluminum activity in the short term.

Those declines are evident in the primary aluminum coincident index, a measure of current economic activity, which has experienced its sharpest drop since the mid-1980s. Much of this is due to the power situation in the Western United States that has reduced domestic primary aluminum production. (Tables and charts for the primary aluminum indexes are in a separate file.) *(continued on page 12)*

Table 1.
Leading Index of Metal Prices and Growth Rates of the Nonferrous Metals Price Index, Inventories of Nonferrous Metal Products, and Selected Metal Prices

	Leading Index of Metal Prices (1967=100)	Six-Month Smoothed Growth Rates				
		MII Nonferrous Metals Price Index	U.S. Nonferrous Metal Products Inventories (1982\$)	Primary Aluminum	Primary Copper	Steel Scrap
2000						
March	107.5	7.6	-2.6	9.6	9.8	19.8
April	107.5r	0.2	-1.8	-1.7	4.9	15.7
May	106.4r	-2.4	-1.7	-4.9	4.9	-1.9
June	106.4r	5.4	-1.6	6.9	5.2	-13.7
July	105.4	5.1	-0.8	3.3	12.4	-20.5
August	105.3	6.6	-1.7	4.4	13.9	-23.2
September	104.4r	8.9	-2.8	4.5	21.7	-22.4
October	102.9r	-4.9	-1.1	-8.4	5.7	-37.0
November	102.4r	-4.7	4.1r	-5.7	1.8	-45.6
December	102.6r	-0.5	2.0	2.1	-0.7	-35.9
2001						
January	101.8r	13.7	2.9	22.7	-0.8	-20.4
February	102.0r	-0.5	1.9r	3.0	-5.8	-34.0
March	100.9	-10.5	0.0	-7.8	-14.4	-27.2
April	NA	-4.5	NA	1.5	-13.8	-21.0
<i>NA: Not available r: Revised</i>						
Note:	The components of the Leading Index of Metal Prices are the spread between the U.S. 10-year Treasury Note and the federal funds rate, and the 6-month smoothed growth rates of the deflated value of new orders for nonferrous metals, the Economic Cycle Research Institute's 16-Country Long Leading Index, and the reciprocal of the trade-weighted average exchange value of the U.S. dollar against other major currencies. The Metal Industry Indicators (MII) Nonferrous Metals Price Index measures changes in end-of-the-month prices for primary aluminum, copper, lead, and zinc traded on the London Metal Exchange (LME). The steel scrap price used is the price of No. 1 heavy melting. Inventories consist of the deflated value of finished goods, work in progress, and raw materials for U.S.-produced nonferrous metals and nonferrous metal products. Six-month smoothed growth rates are based on the ratio of the current month's index or price to its average over the preceding 12 months, expressed at a compound annual rate.					
Sources:	U.S. Geological Survey (USGS); American Metal Market (AMM); the London Metal Exchange (LME); U.S. Census Bureau; the Economic Cycle Research Institute, Inc. (ECRI); and Federal Reserve Board.					

**CHART 1.
LEADING INDEX OF METAL PRICES AND GROWTH RATES
OF NONFERROUS METALS PRICE INDEX, INVENTORIES OF
NONFERROUS METAL PRODUCTS, AND SELECTED PRICES**

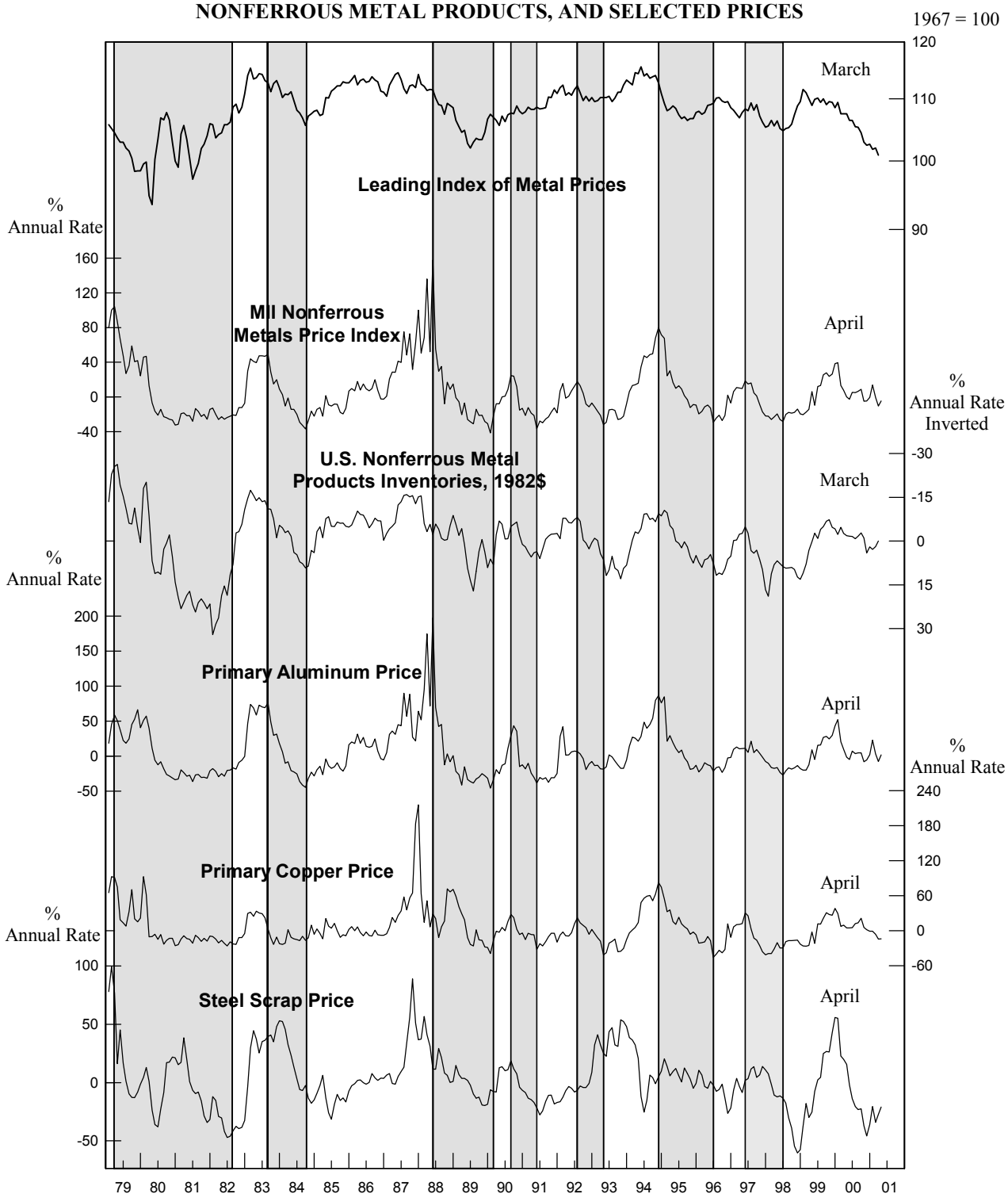


Table 2.
The Primary Metals Industry Indexes and Growth Rates

	Leading Index		Coincident Index	
	(1977 = 100)	Growth Rate	(1977 = 100)	Growth Rate
2000				
May	127.1	-3.3	115.9	1.5
June	126.0	-4.7	116.3	1.6
July	125.3	-5.2	116.1	1.0
August	124.8	-5.4	115.2	-0.7
September	125.4r	-4.0r	114.9	-1.2
October	123.3r	-6.5r	114.2	-2.4
November	122.9r	-6.3r	113.7r	-3.2
December	121.8r	-7.0r	111.0	-7.1
2001				
January	122.4r	-5.2r	110.2	-7.8
February	122.2r	-4.5r	109.3r	-8.5r
March	122.7r	-3.0r	108.7	-8.6
April	123.5	-1.2	NA	NA

NA: Not available r: Revised

Note: Growth rates are expressed as compound annual rates based on the ratio of the current month's index to the average index during the preceding 12 months.

Table 3.
The Contribution of Each Primary Metals Index Component to the Percent Change in the Index from the Previous Month

Leading Index	March	April
1. Average weekly hours, primary metals (SIC 33)	-0.1r	0.7
2. S&P stock price index, machinery, diversified	0.0r	0.0
3. Ratio of price to unit labor cost (SIC 33)	0.0	NA
4. JOC-ECRI metals price index growth rate	-0.1	-0.1
5. New orders, primary metals, (SIC 33) 1982\$	-0.1	NA
6. Index of new private housing units authorized by permit	-0.1	NA
7. Growth rate of U.S. M2 money supply, 1996\$	0.7	NA
8. Purchasing Managers' Index	0.2r	0.0
Trend adjustment	0.0	0.0
Percent change (except for rounding differences)	0.5r	0.6
Coincident Index	February	March
1. Industrial production index, primary metals (SIC 33)	-0.1	0.0
2. Total employee hours, primary metals (SIC 33)	-0.7	-0.5
3. Value of shipments, primary metals, (SIC 33) 1982\$	-0.2r	-0.1
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	-0.9r	-0.5

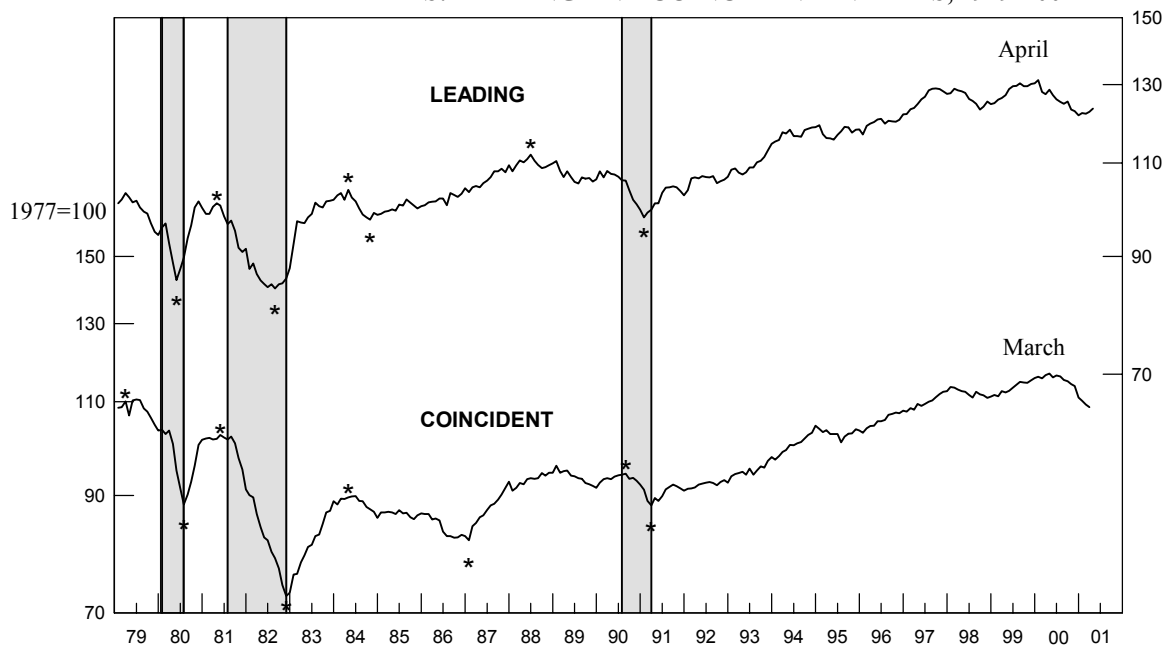
Sources: Leading: 1, Bureau of Labor Statistics; 2, Standard & Poor's; 3, U.S. Geological Survey; 4, Journal of Commerce and Economic Cycle Research Institute, Inc.; 5, U.S. Census Bureau and U.S. Geological Survey; 6, U.S. Census Bureau and U.S. Geological Survey; 7, Federal Reserve Board, Conference Board, and U.S. Geological Survey; and 8, National Association of Purchasing Management. Coincident: 1, Federal Reserve Board; 2, Bureau of Labor Statistics and U.S. Geological Survey; 3, U.S. Census Bureau and U.S. Geological Survey. All series are seasonally adjusted, except 2, 3, and 4 of the leading index.

NA: Not available r: Revised

Note: A component's contribution, shown in Tables 3, 5, 7, and 9, measures its effect, in percentage points, on the percent change in the index. Each month, the sum of the contributions plus the trend adjustment equals (except for rounding differences) the index's percent change from the previous month.

CHART 2.

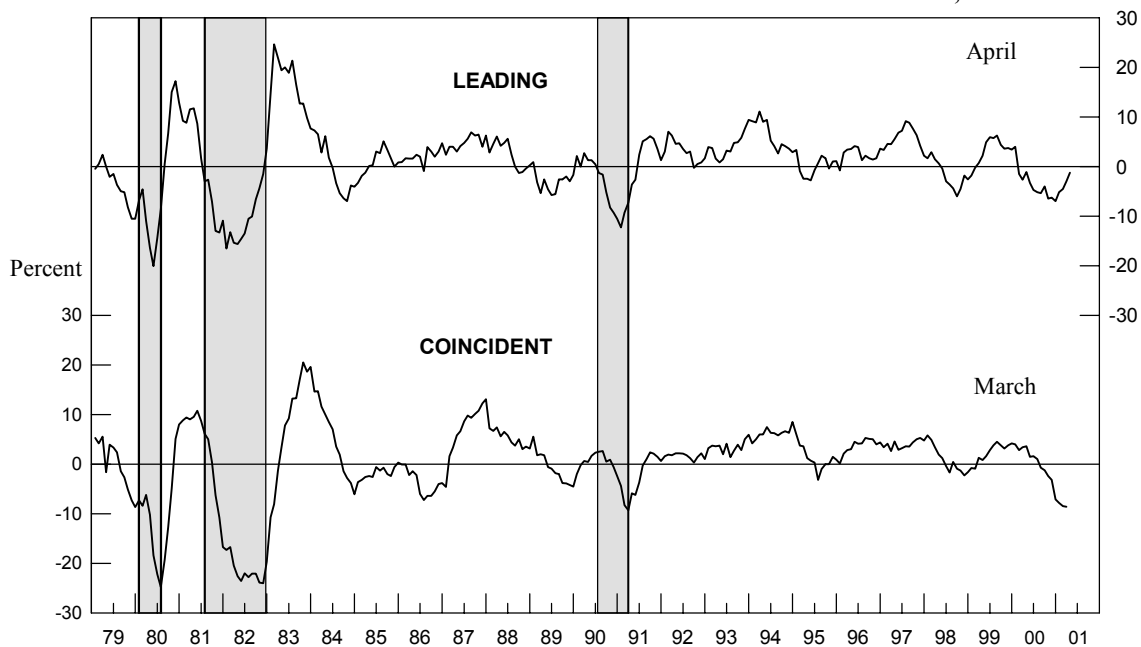
PRIMARY METALS: LEADING AND COINCIDENT INDEXES, 1979-2001 1977=100



Shaded areas are business cycle recessions. Asterisks (*) signify peaks (the end of an expansion) and troughs (the end of a downturn) in the economic activity reflected by the indexes.

CHART 3.

PRIMARY METALS: LEADING AND COINCIDENT GROWTH RATES, 1979-2001 Percent



Shaded areas are business cycle recessions.

The growth rates are expressed as compound annual rates based on the ratio of the current month's index to its average level during the preceding 12 months.

Table 4.
The Steel Industry Indexes and Growth Rates

	Leading Index		Coincident Index	
	(1977 = 100)	Growth Rate	(1977 = 100)	Growth Rate
2000				
April	110.6	-3.3	103.4	2.3
May	109.8	-4.3	103.2	1.5
June	108.7	-5.9	103.5	1.5
July	107.1	-7.8	103.1	0.3
August	107.3	-6.8	102.5	-1.1
September	107.4r	-5.8r	102.3	-1.5
October	105.1r	-9.0r	101.2	-3.4
November	104.8r	-8.5r	100.6r	-4.4r
December	103.6r	-9.4r	98.2	-8.2
2001				
January	103.9	-7.6r	97.6	-8.5
February	104.2r	-5.8r	97.7r	-7.5r
March	105.8	-2.0	97.7	-6.6

r: Revised

Note: Growth rates are expressed as compound annual rates based on the ratio of the current month's index to the average index during the preceding 12 months.

Table 5.
The Contribution of Each Steel Index Component to the Percent Change in the Index from the Previous Month

Leading Index	February	March
1. Average weekly hours, blast furnaces and basic steel products (SIC 331)	-0.1r	0.1
2. New orders, steel works, blast furnaces, and rolling and finishing mills, 1982\$, (SIC 331)	0.0r	0.0
3. Shipments of household appliances, 1982\$	-0.2	0.2
4. S&P stock price index, steel companies	0.4	0.0
5. Industrial production index for automotive products	0.2r	0.4
6. Growth rate of the price of steel scrap (#1 heavy melting, \$/ton)	-0.2	0.1
7. Index of new private housing units authorized by permit	-0.1	-0.1
8. Growth rate of U.S. M2 money supply, 1996\$	0.2r	0.7
9. Purchasing Managers' Index	0.1	0.2
Trend adjustment	0.0	0.0
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Percent change (except for rounding differences)	0.3	1.6
Coincident Index		
1. Industrial production index, basic steel and mill products (SIC 331)	0.2r	0.2
2. Value of shipments, steel works, blast furnaces, and rolling and finishing mills (SIC 331), 1982\$	0.0	0.0
3. Total employee hours, blast furnaces and basic steel products (SIC 331)	-0.1r	-0.3
Trend adjustment	0.1	0.1
	<hr/>	<hr/>
Percent change (except for rounding differences)	0.2r	0.0

Sources: Leading: 1, Bureau of Labor Statistics; 2, U.S. Census Bureau and U.S. Geological Survey; 3, U.S. Census Bureau and U.S. Geological Survey; 4, Standard & Poor's; 5, Federal Reserve Board; 6, Journal of Commerce and U.S. Geological Survey; 7, U.S. Census Bureau and U.S. Geological Survey; 8, Federal Reserve Board, Conference Board, and U.S. Geological Survey; and 9, National Association of Purchasing Management. Coincident: 1, Federal Reserve Board; 2, U.S. Census Bureau and U.S. Geological Survey; 3, Bureau of Labor Statistics and U.S. Geological Survey. All series are seasonally adjusted, except 4 and 6 of the leading index.

r: Revised

CHART 4.
STEEL: LEADING AND COINCIDENT INDEXES, 1979-2001

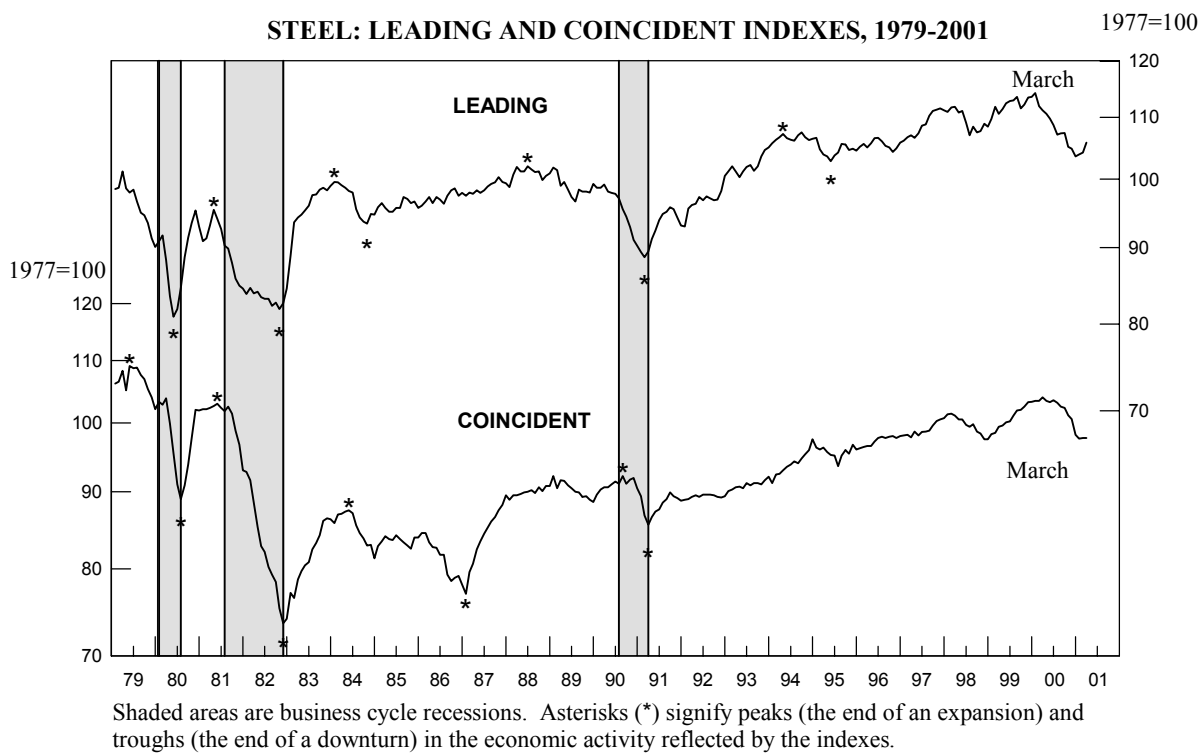


CHART 5.
STEEL: LEADING AND COINCIDENT GROWTH RATES, 1979-2001

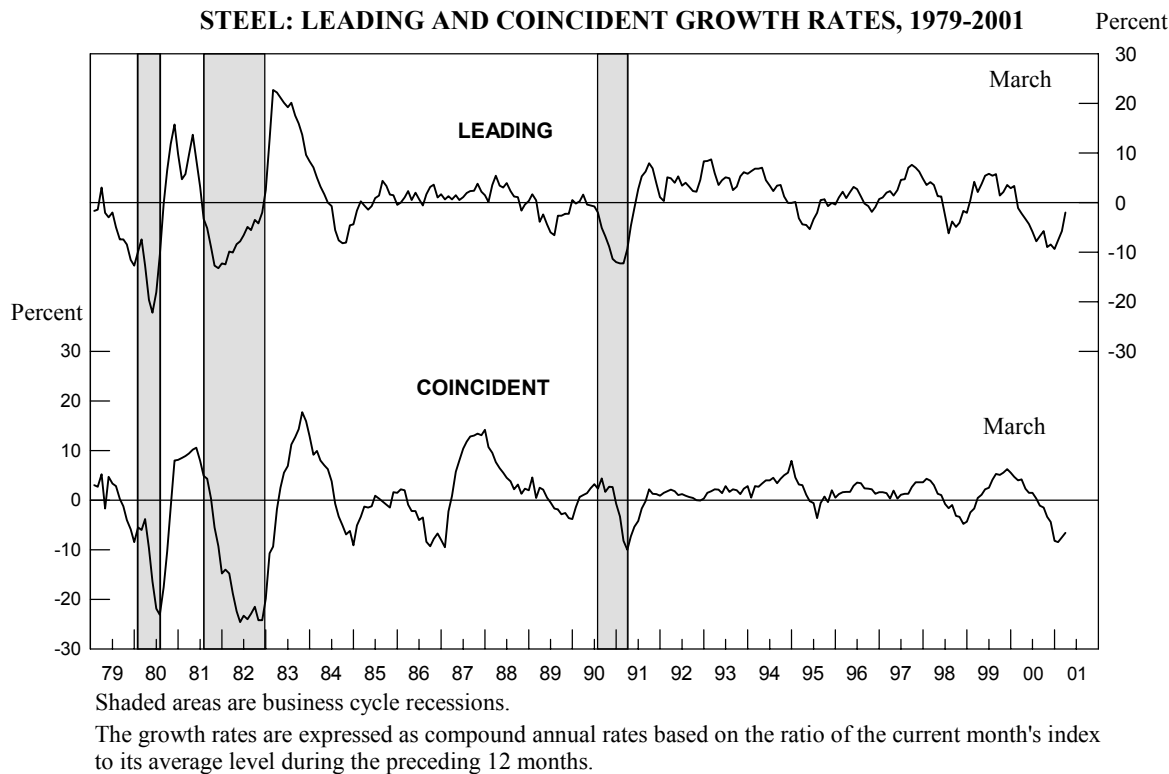


Table 6.
The Aluminum Mill Products Industry Indexes and Growth Rates

	Leading Index		Coincident Index	
	(1977 = 100)	Growth Rate	(1977 = 100)	Growth Rate
2000				
April	159.9	2.2	144.7	2.8
May	157.8	-0.6	144.2	1.7
June	157.7	-0.7	142.5	-0.8
July	154.4	-4.4	144.0	1.2
August	158.2	0.4	142.4	-1.1
September	160.2r	2.9r	141.2	-2.3
October	157.5r	-0.6r	140.4	-3.2
November	157.9r	-0.3r	140.3	-3.2
December	157.9r	-0.4r	143.2	0.7
2001				
January	158.8r	0.7r	143.6r	1.2r
February	160.7r	2.9r	142.7r	0.0r
March	161.9	4.2	142.5	-0.2

r: Revised

Note: Growth rates are expressed as compound annual rates based on the ratio of the current month's index to the average index during the preceding 12 months.

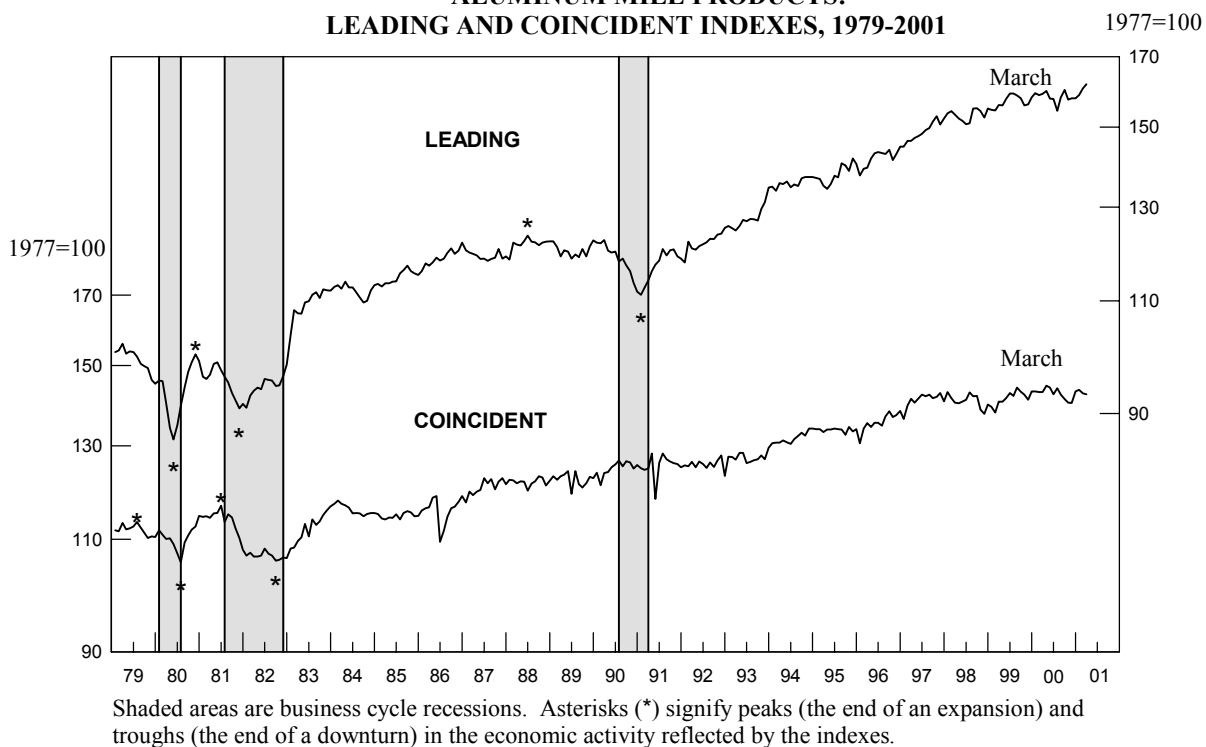
Table 7.
The Contribution of Each Aluminum Mill Products Index Component to the Percent Change in the Index from the Previous Month

Leading Index	February	March
1. Average weekly hours, aluminum sheet, plate, and foil (SIC 3353)	-0.1r	-0.7
2. Index of new private housing units authorized by permit	-0.2	-0.2
3. Industrial production index for automotive products	0.2	0.6
4. Construction contracts, commercial and industrial (square feet)	0.3r	-0.4
5. Net new orders for aluminum mill products (pounds)	0.4r	0.3
6. Growth rate of U.S. M2 money supply, 1996\$	0.3	0.8
7. Purchasing Managers' Index	0.1	0.2
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	1.1r	0.7
Coincident Index		
1. Industrial production index, aluminum sheet, plate, and foil (SIC 3353)	-0.2r	-0.3
2. Total employee hours, aluminum sheet, plate, and foil (SIC 3353)	-0.6r	0.0
Trend adjustment	0.2	0.2
Percent change (except for rounding differences)	-0.6r	-0.1

Sources: Leading: 1, Bureau of Labor Statistics; 2, U.S. Census Bureau and U.S. Geological Survey; 3, Federal Reserve Board; 4, F.W. Dodge, Division of McGraw-Hill Information Systems Company; 5, The Aluminum Association, Inc. and U.S. Geological Survey; 6, Federal Reserve Board, Conference Board, and U.S. Geological Survey; 7, National Association of Purchasing Management. Coincident: 1, Federal Reserve Board; 2, Bureau of Labor Statistics and U.S. Geological Survey. All series are seasonally adjusted.

r: Revised

**CHART 6.
ALUMINUM MILL PRODUCTS:
LEADING AND COINCIDENT INDEXES, 1979-2001**



**CHART 7.
ALUMINUM MILL PRODUCTS:
LEADING AND COINCIDENT GROWTH RATES, 1979-2001**

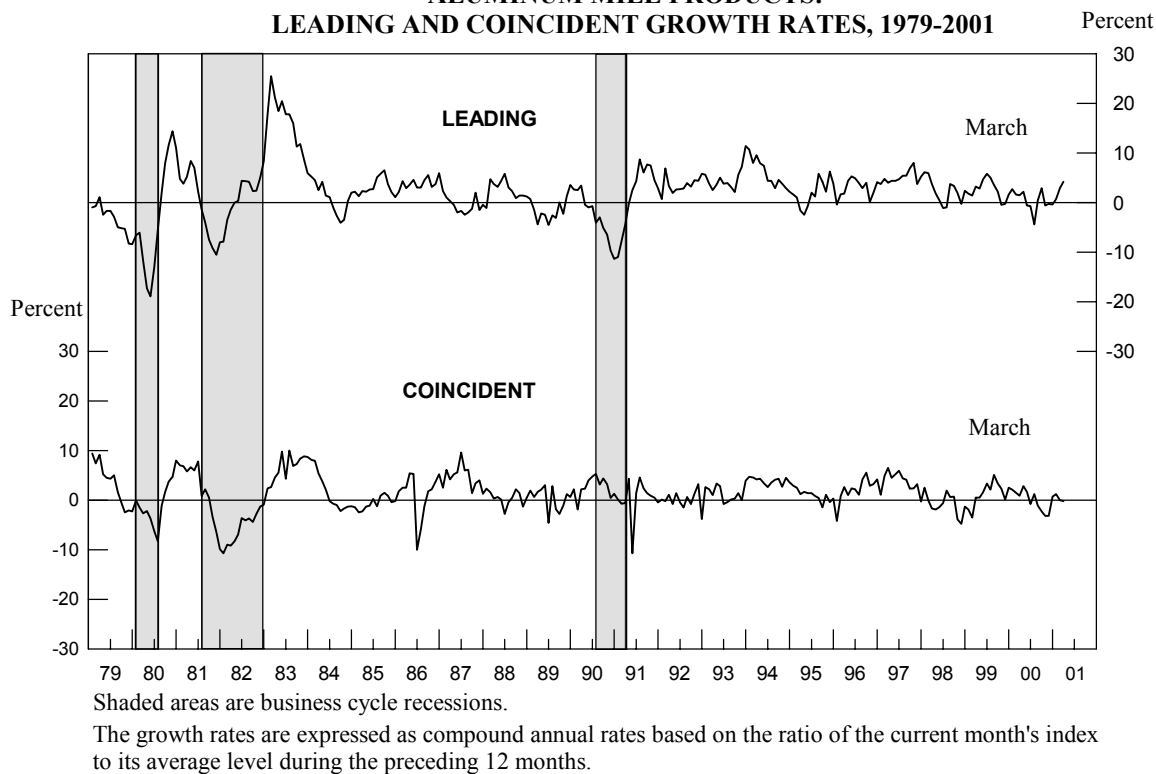


Table 8.
The Copper Industry Indexes and Growth Rates

	Leading Index		Coincident Index	
	(1977 = 100)	Growth Rate	(1977 = 100)	Growth Rate
2000				
April	129.2	-2.5	120.9	-3.6
May	129.1	-2.5	123.3	0.7
June	128.0	-3.9	122.8	0.1
July	127.1	-4.5	121.6	-1.5
August	127.0	-4.0	121.2	-1.6
September	127.2	-3.0	121.6	-0.7
October	123.7	-7.3	121.0	-1.5
November	124.5	-5.3	122.0	0.2
December	124.6	-4.6	119.6r	-3.4r
2001				
January	125.0	-3.4	119.7r	-3.1r
February	123.6	-4.6r	121.2r	-0.6r
March	121.7	-6.8	119.6	-2.9

r: Revised

Note: Growth rates are expressed as compound annual rates based on the ratio of the current month's index to the average index during the preceding 12 months.

Table 9.
The Contribution of Each Copper Index Component to the Percent Change in the Index from the Previous Month

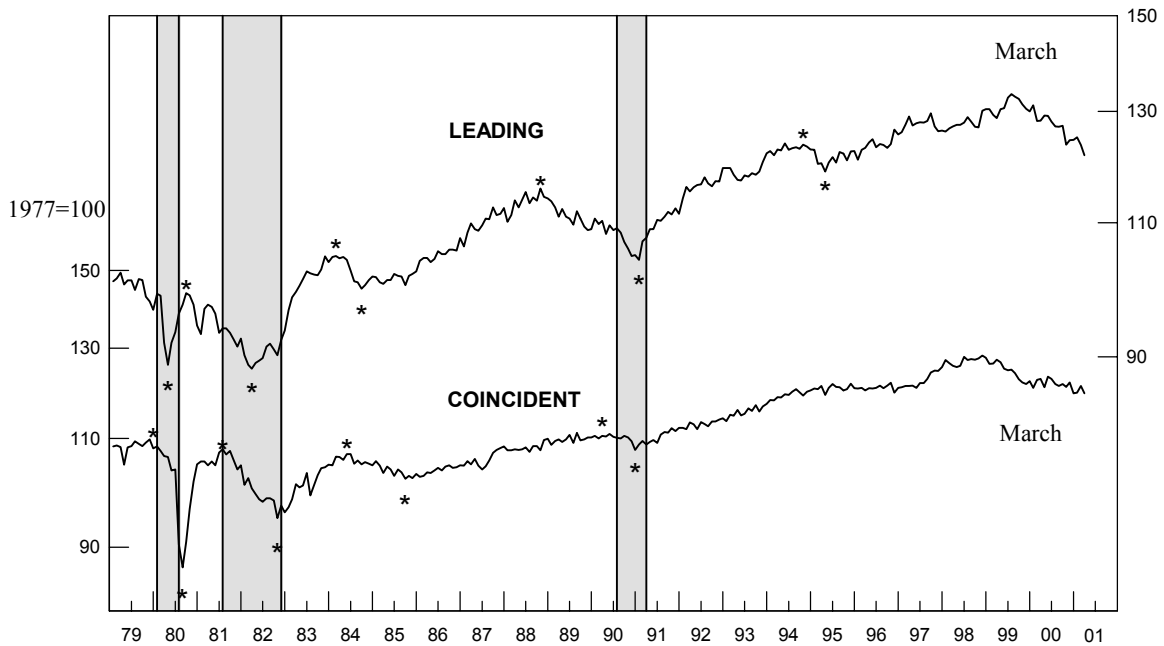
Leading Index	February	March
1. Average weekly overtime hours, rolling, drawing, and extruding of copper (SIC 3351)	-0.7	-0.9
2. New orders, nonferrous and other primary metals, 1982\$	-0.1	-0.2
3. S&P stock price index, building materials companies	-0.1	0.0
4. Ratio of shipments to inventories, electronic and other electrical equipment (SIC 36)	-0.2	0.0
5. LME spot price of primary copper	-0.2	-0.3
6. Index of new private housing units authorized by permit	-0.2	-0.2
7. Spread between the U.S. 10-year Treasury Note and the federal funds rate	0.3	0.0
Trend adjustment	0.0	0.0
Percent change (except for rounding differences)	-1.2r	-1.6
Coincident Index		
1. Industrial production index, primary smelting and refining of copper (SIC 3331)	-0.1	-0.2
2. Total employee hours, rolling, drawing, and extruding of copper (SIC 3351)	1.2r	-1.2
3. Copper refiners' shipments (short tons)	0.1	0.0
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	1.3r	-1.3

Sources: Leading: 1, Bureau of Labor Statistics; 2, U.S. Census Bureau and U.S. Geological Survey; 3, Standard & Poor's; 4, Census Bureau and U.S. Geological Survey; 5, London Metal Exchange; 6, U.S. Census Bureau and U.S. Geological Survey; 7, Federal Reserve Board and U.S. Geological Survey. Coincident: 1, Federal Reserve Board; 2, Bureau of Labor Statistics; 3, American Bureau of Metal Statistics, Inc. and U.S. Geological Survey. All series are seasonally adjusted, except 3, 5, and 7 of the leading index.

r: Revised

CHART 8.
COPPER: LEADING AND COINCIDENT INDEXES, 1979-2001

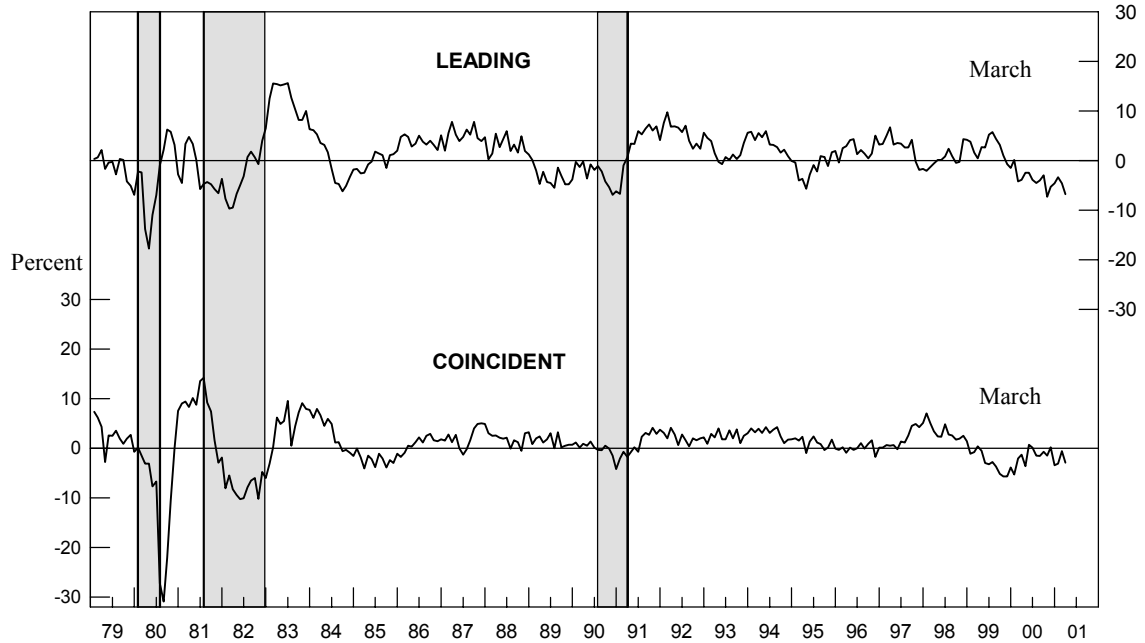
1977=100



Shaded areas are business cycle recessions. Asterisks (*) signify peaks (the end of an expansion) and troughs (the end of a downturn) in the economic activity reflected by the indexes.

CHART 9.
COPPER: LEADING AND COINCIDENT GROWTH RATES, 1979-2001

Percent



Shaded areas are business cycle recessions.

The growth rates are expressed as compound annual rates based on the ratio of the current month's index to its average level during the preceding 12 months.

(continued from page 2)

The **copper leading index** dropped 1.5% in March, down to 121.7 from 123.6 in February, and the index's 6-month smoothed growth rate slumped to -6.8% from a revised -4.6% in February. Three of the index's seven components were flat in March, but the other four components posted sizable declines led by a pronounced drop in average weekly overtime hours in copper rolling, drawing, and extruding establishments.

Average overtime hours have decreased an unprecedented 3.6 hours since last November, which is the largest 4-month decline in this indicator in its 29-year history. The growth rate of the copper leading index points to continuing declines in domestic primary copper activity over the next few months. This activity, like primary aluminum activity, is being adversely affected by high electricity costs.

Outlook Poor for Increasing Growth in Metal Prices

The **metals price leading index** fell 1.1% in March, the latest month for which it is available, down to 100.9 from a revised 102.0 in February, which is the lowest reading for this index since August 1981. The index's 6-month smoothed growth rate dropped to -6.4% from a revised -5.2% in February. As is typically the case, only three of the index's four components were available for the March index calculation. All three of those components moved lower. A relatively large drop in the growth rate of the index measuring the trade-weighted average exchange value of other major currencies against the U.S. dollar was responsible for most of the drop in the leading index.

The growth rate of the inflation-adjusted value of new orders for U.S. nonferrous metals posted a moderate decline, while the yield spread between the U.S. 10-year Treasury Note and the federal funds rate moved down a comparatively small amount. The fourth index component, the growth rate of the Economic Cycle Research Institute's (ECRI) 16-Country Long Leading Index, was available only through February, when it was unchanged from January's downwardly revised rate. However, that growth rate, -3.2%, is also the lowest in over 20 years.

The 6-month smoothed growth rate of the inflation-adjusted value of U.S. nonferrous metal products inventories slowed in March, moving to 0.0% from a revised 1.9% in February. After the latest revisions, this growth rate, which tends to move inversely with metal price growth, now shows a declining trend since last November.

The latest trend of the metals price leading index points to little or no growth for most metal prices in the coming months. However, the growth rate of U.S. nonferrous metal products inventories may be beginning to turn down, which would support higher metal prices if inventories continue to fall and demand for metal products picks up.

The next summary is scheduled for release on MINES FaxBack at 10:00 a.m. EDT, Friday, July 20. Access MINES FaxBack from a touch-tone telephone attached to a fax machine by dialing 703-648-4999. The address for *Metal Industry Indicators* on the World Wide Web is:
<http://minerals.usgs.gov/minerals/pubs/mii/>

The ***Metal Industry Indicators*** is produced at the U.S. Geological Survey by the Minerals Information Team. The report is prepared by Ken Beckman (703-648-4916), e-mail (kbeckman@usgs.gov), and Gail James (703-648-4915), e-mail (gjames@usgs.gov). The former Center for International Business Cycle Research, under the direction of Dr. Geoffrey H. Moore, and the former U.S. Bureau of Mines developed the metal industry leading and coincident indexes in the early 1990's. Customers can send mail concerning the *Metal Industry Indicators* to the following address:

U.S. Geological Survey
Minerals Information Team
988 National Center
Reston, Virginia 20192